Climate change adaptation and mitigation strategies: considerations with respect to electromagnetic fields

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Background and aims: Technological developments to mitigate or adapt to climate change may alter the population's exposure to electromagnetic fields (EMF), in particular extremely low frequency (ELF)-EMF. Our main objectives were to perform a "horizon scan" about potential effects of climate change adaptation/mitigation strategies on the design, use, location or quantity of sources of EMF, and concomitant changes in exposure to EMF of (groups of) the population. Existing knowledge about potential health effects is briefly summarised in the poster.
Methods: Information about EMF-related aspects of climate adaptation and mitigation strategies was obtained by consulting experts in electricity production and transport. The (scientific) literature was consulted about health effects of EMF exposure.
Results: A major developments will be that a central production process that is dependent on fossil fuels (coals, oil and gas) will be replaced with a combined central and decentral production process that uses solar panels, wind turbines and hydro-electric power stations. Further, (inter)national electricity systems will be more interconnected. Both developments require a strong expansion of the network of overhead or underground high-voltage power lines. If the electric car will be used on a large scale, this has to be accompanied by a dense charging infrastructure in public and private spaces.
How these developments will translate to the public's EMF exposure is dependent on a.o. how the electricity infrastructure will be designed in relation to residential areas.
Conclusions: The climate change induced adaptations in electricity production and transport may change average proximity to (overhead) power lines and exposure to ELF-EMF in the population, which may change the associated risk of childhood leukaemia. Moreover, we anticipate proliferation of idiopathic environmental intolerances attributed to EMF, and increased concerns about health risks.